

Statement of Project Objectives**Bipartisan Infrastructure Law (BIL) Grid Resilience and Innovation Partnerships (GRIP)
Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740****Assistance Listing Number: 81.254**

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Statement of Project Objectives (SOPO)

Grid Visibility Program (GVP): Unlocking System-Wide Data to Build a More Resilient and Equitable Grid

A. OBJECTIVES

The objective of the project is to deploy grid enhancing technologies (GETs), dynamic line ratings (DLR) and smart grid chips (SGC) technology, in the Recipient's electric service territory by the end of 2028. The DLR equipment will be installed on 7 transmission lines and approximately 50,000 SGCs will be installed across 15 communities in Allegheny County. Nine of the 15 selected communities include census tracts that are classified as disadvantaged communities (DACs). This comprises 61% of the participating population.

B. SCOPE OF WORK

The project will be conducted in five budget periods:

- **Budget Period 1 (BP1) – Month 1-12: Planning, Feasibility Confirmation, Project & Organizational Preparation, Design, Use Cases, Deployment Phase 1 Expansion** - BP1 is focused on baselining the plan for the project, confirming feasibility, use cases, prepare the organization for the expanded deployment, and the Community Engagement SMART goal.
- **Budget Period 2 (BP2) – Month 13-24: Phase 2 Expansion, Cybersecurity, Community Engagement, Deployment Phase 2 Expansion** - BP2 is focused on expanding the deployment and the Investing in the American Workforce and DEIA SMART goal.
- **Budget Period 3 (BP3) – Month 25-36: Deployment Phase 3 Expansion, Checkpoint, Cybersecurity Re-assessment, and Community Update** – BP3 is focused on expanding the deployment and the Increased Parity in Clean Energy Technology Access and Adoption SMART goal.
- **Budget Period 4 (BP4) – Month 37-48: Deployment Phase 4 Expansion, Checkpoint, Cybersecurity Re-assessment, and Community Update** – BP4 is focused on expanding the deployment and the Energy Resilience SMART goal.
- **Budget Period 5 (BP5) – Month 49-60: Deployment Phase 5 Expansion, Checkpoint, Cybersecurity Re-assessment, Community Update, and Final Report** - BP5 is focused on finalizing the deployment, gathering data, and reporting on the project learnings, recommendations, community benefits, and completion of SMART goals.

C. TASKS TO BE PERFORMED

Budget Period 1 (BP1): Planning, Feasibility Confirmation, Project & Organizational Preparation, Design, and Use Cases

Task 1.0: Project Management and Planning

Subtask 1.1 – Project Management Plan (PMP) - Within 30 days of award, the Recipient shall submit a Project Management Plan (PMP) to the designated Federal Project Officer (FPO). The Recipient shall not proceed beyond Task 1.0 until the PMP has been accepted by the FPO. The PMP shall be revised and resubmitted as often as necessary, during the course of the project, to capture any major/significant changes to the planned approach, budget, key personnel, major resources, etc. The Recipient shall manage and direct the project in accordance with the accepted PMP to meet all technical, schedule and budget objectives and requirements. The Recipient will coordinate activities to effectively accomplish the work. The Recipient will ensure that project plans, results, and decisions are appropriately documented, and that project reporting and briefing requirements are satisfied.

Subtask 1.2: National Environmental Policy Act (NEPA) Compliance - As required, the Recipient shall provide the documentation necessary for NEPA compliance.

Subtask 1.3: Cybersecurity Plan (CSP) - The CSP will outline the activities, tasks, certifications, practices, and standards that will be applied to the proposed system. The CSP shall be revised and resubmitted as often as necessary, during the course of the project, to capture any major/significant changes. The Recipient will follow the Recipient's established cybersecurity processes and procedures.

Subtask 1.4: Continuation Briefing(s) - The Recipient will brief DOE on roughly an annual basis to explain the plans, progress, and results of the technical effort. The briefing shall also describe performance relative to project success criteria, milestones, and the Go/No-Go Decision point that are documented in the Project Management Plan (PMP).

Task 2.0: Feasibility, Project & Organizational Preparation and Design, and Use Cases

Subtask 2.1: Feasibility Confirmation - This subtask will confirm the feasibility and necessity of DLR installation on specific transmission lines and SGC deployment for the targeted region. The goal is to validate and reiterate the technical feasibility and need of the technology for the specified area(s).

Subtask 2.2: SGC Project and Organizational Preparation - This subtask is focused on identifying SGC risks, training needs, and success criteria for the SGC deployment.

Subtask 2.3: System Design - This subtask is focused on developing the technical architecture, integration needs, system requirements, and test cases to implement the system.

Subtask 2.4: Develop SGC Use Cases - This subtask is focused on confirming the selected sites, site characteristics (DERs, clusters, circuits/substations, etc.), data collection, establishing core services & applications for integration, and outlining the requirements & process flows.

Task 3.0: Phase 1 Expansion

Subtask 3.1: DLR Deployment Expansion - Since the Recipient has already operationalized the DLR system and technology, this subtask is focused on expanding the existing DLR deployment to 3 additional transmission lines.

Subtask 3.2: SGC Deployment Expansion - By the time of this project award, the Recipient expects to have already tested and implemented the SGC software systems. This subtask is focused on deploying approximately 10,000.

Subtask 3.3: Community Workforce Coalition (CWC) - The Recipient will form a CWC to include representation from community-based organizations, academia, and/or union representatives as outlined in the Community Benefits Plan (CBP).

Milestone 3.3.1: Finalization of the participants in the CWC and conduct first listening tour.

Go/No-Go Decision Point 1: Demonstrate the project feasibility, use cases, compliance, PMP, CSP, CWC, and Phase 1 deployment.

Budget Period 2 (BP2): Cybersecurity and Community Engagement

Task 4.0: Cybersecurity

Subtask 4.1: Cybersecurity Evaluation - This subtask will support the common goal of maintaining/increasing reliability, resiliency, and security of the U.S. power grid. This subtask may include an assessment of vendors and the system(s) by the Recipient's cybersecurity specialists, third-party risk assessment, and confirming that the vendors meet security standards outlined in the CSP.

Task 5.0: Community Benefits & Engagement

Subtask 5.1: Community Benefits Confirmation & Engagement - This subtask is focused on refining & confirming the validity of the CBP submitted in the Recipient's application. The goal is to enhance the quality of life for community members and address specific benefits brought to the community by the Recipient's project, while addressing issues or needs within the community.

Milestone 5.1.1: Conduct one CWC listening session per budget period to report out on SMART goals and continue to collect feedback to inform necessary CBP revisions; In collaboration with Pitt, develop new course modules to support the GVP.

Task 6.0: Phase 2 Expansion

Subtask 6.1: DLR Deployment Expansion - Since the Recipient has already operationalized the DLR system and technology, this subtask is focused on expanding the existing DLR deployment to two additional transmission lines.

Subtask 6.2: SGC Deployment Expansion - This subtask is focused on deploying approximately 10,000 SGCs.

Go/No-Go Decision Point 2: Demonstrate the community benefits, organizational readiness, and security of the system through achievement of BP2 tasks and milestones.

Budget Period 3 (BP3): Deployment Phase 1 Expansion, Checkpoint, Cybersecurity Re-assessment, and Community Update

Task 7.0: Phase 3 Expansion

Subtask 7.1: DLR Deployment Expansion - Since the Recipient has already operationalized the DLR system and technology, this subtask is focused on expanding the existing DLR deployment two additional transmission lines.

Subtask 7.2: SGC Deployment Expansion - This subtask is focused on deploying approximately 15,000 SGCs.

Task 8.0: Checkpoint

Subtask 8.1: Cybersecurity Reassessment - Cybersecurity monitoring will occur throughout the project, this subtask is focused on performing a system health check, reporting, and revising the CSP, if required.

Subtask 8.2: Community Benefit Quantification & Update - The goal of this subtask is to quantify the community benefits to date, and to provide an update to the appropriate community stakeholders. The update will include soliciting feedback from the community.

Milestone 8.2.1: Conduct one CWC listening session per budget period to report out on SMART goals and continue to collect feedback to inform necessary CBP revisions; develop and implement new strategies to attract talent from DACs and underrepresented groups for GVP workforce

development/employment opportunities; demonstrate hosting capacity can be calculated on-demand using data driven models of DER actions and responses to control signals; determine highest priority voltage violations to mediate in GVP communities based on SGC data

Go/No-Go Decision Point 3: Demonstrate the progress made towards deployment, and cybersecurity through achievement of BP 3 milestones as listed above. The completion of BP3 should increase confidence to continue the deployment.

Budget Period 4 (BP4): Deployment Phase 2 Expansion, Checkpoint, Cybersecurity Re-assessment, and Community Update

Task 9.0: Phase 4 Expansion

Subtask 9.1: SGC Deployment Expansion - This subtask is focused on deploying approximately 15,000 SGCs.

Task 10.0: Checkpoint

Subtask 10.1: Cybersecurity Reassessment - Although, cybersecurity monitoring will occur throughout the project, this subtask is focused on performing a system health check, reporting, and revising the CSP, if required.

Subtask 10.2: Community Benefit Quantification & Update - The goal of this subtask is to quantify the community benefits to date, and to provide an update to the appropriate community stakeholders. The update will include soliciting feedback from the community.

Milestone 10.2.1: Conduct one CWC listening session per budget period to report out on SMART goals and continue to collect feedback to inform necessary CBP revisions; demonstrate that DLC's interconnection study process timelines can be reduced in GVP communities with SGCs using real-time hosting capacity matrices.

Go/No-Go Decision Point 4: Demonstrate the progress made towards deployment, and cybersecurity through achievement of Budget Period 4 milestones as listed above. The completion of Budget Period 3 should increase confidence to continue the deployment.

Budget Period 5 (BP5): Deployment Phase 3 Expansion, Checkpoint, Cybersecurity Re-assessment, Community Update, and Final Report

Task 11.0: Phase 5 Expansion

Subtask 11.1: SGC Software Updates - This subtask is focused on OTA software updates to all 50,000 SGCs in the field.

Task 12.0: Checkpoint

Subtask 12.1: Cybersecurity Reassessment - Although cybersecurity monitoring will occur throughout the project, this subtask is focused on performing a system health check, reporting, and revising the CSP, if required.

Subtask 12.2: Community Benefit Quantification & Update - The goal of this subtask is to quantify the community benefits to date, and to provide an update to the appropriate community stakeholders. The update will include soliciting feedback from the community.

Milestone 12.2.1: Conduct one CWC listening session per budget period to report out on SMART goals and continue to collect feedback to inform necessary CBP revisions; reduce DLC's internal interconnection processing time by 25%; reduce voltage violations by at least 5% through system repair or optimization of local resources (such as DERs, controllers, and/or loads).

Task 13.0: Final Report

Subtask 13.2: Potential Improvements and Recommendations to Industry - Based on the project learnings, potential system enhancements & improvements will be documented

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along with recommendations to industry. Recipient will lead, with support from Project Partners to document.

Subtask 13.3: Final Report - Compile all appropriate project data to develop a final report to share with the industry. Some items that may be included in the final report include project management approach, technical diagrams, test plans & results, non-sensitive cyber security information, cost benefit analysis, lessons learned, M&V data, intellectual property, publications, use cases, and recommendations.

End of Project Goal: By the end of 2028, meet/exceed performance objectives for the project to deploy DLR sensors to 7 transmission lines and approximately 50,000 SGCs at customer premises, while executing upon the SMART goals outlined in the CBP.

D. DELIVERABLES

Subtask 1.1: Project Management Plan	Task 7.0: Phase 3 Deployment Expansion Results
Subtask 1.3: Cybersecurity Plan	Subtask 8.1: Cybersecurity Reassessment Report
Subtask 2.3: System Design	Subtask 8.2: Community Report and Feedback
Subtask 2.4: Use Cases	Task 9.0: Phase 4 Deployment Expansion Results
Task 3.0: Phase 1 Deployment Expansion Results	Subtask 10.1: Cybersecurity Reassessment Report
Subtask 4.1: Cybersecurity Report	Subtask 10.2: Community Report and Feedback
Subtask 5.2: Results and Feedback from Community	Task 11.0: Phase 5 Implementation Results
Task 6.0: Phase 2 Deployment Expansion Results	Subtask 13.3: Final Report

In addition to the deliverables listed above, the Recipient shall submit all periodic, topical, final, and other reports in accordance with the Federal Assistance Reporting Checklist and accompanying instructions.

E. BRIEFINGS AND TECHNICAL PRESENTATIONS

The Recipient shall prepare, and present periodic briefings, technical presentations and demonstrations as requested by the Federal Project Officer, which may be held at a DOE or the Recipient's facility, other mutually agreeable location, or via webinar. Such meetings may include all or a combination of the following:

- Kickoff Briefing - Not more than 30 days after submission of the Project Management Plan, the Recipient shall prepare and present a project summary briefing as part of a Project Kickoff Meeting.
- Pre-Continuation Briefing - Not less than 90 days prior to the planned start of a budget period, the Recipient shall brief the DOE on the results to date, and their plans for the subsequent periods of work. The DOE will consider the information from this briefing, as well as the content of deliverables submitted to date, prior to authorizing continuing the project.
- Final Project Briefing - Not less than 30 days prior to the end of the project, the Recipient shall prepare and present a Final Project Briefing on the results and accomplishments of the entire project.
- Other Briefings – The Recipient shall prepare and present technical, financial, and/or administrative briefings as requested by the DOE. Additionally, the DOE may require Recipients to make technical presentations at national and/or industry conferences.